

Claims

1. In a wireless communication system comprising a plurality of subscriber units in wireless communication with a fixed infrastructure, a method for the fixed infrastructure to establish a talkgroup call, the method comprising steps of:

receiving, from a first subscriber unit of the plurality of subscriber units, a request for the talkgroup call, the request comprising an identity of the first subscriber unit and an identity of a talkgroup;

identifying, based on the identity of the talkgroup, a talkgroup of subscriber units comprising at least two subscriber units of the plurality of subscriber units;

identifying, based on the identity of the first subscriber unit, a sub-talkgroup of subscriber units of the talkgroup;

assigning an outbound code to subscribers in the talkgroup not part of the sub-talkgroup;

assigning a plurality of outbound codes in a one-to-one manner to subscribers in the sub-talkgroup; and

assigning, in a one-to-one manner, at least one inbound code to the sub-talkgroup.

2. The method of claim 1, the step of identifying the talkgroup further comprising a step of indexing a table according to the identity of the talkgroup to select an entry uniquely associated with the identity of the talkgroup.

3. The method of claim 2, the step of identifying the sub-talkgroup further comprising a step of indexing the entry according to the identity of the first subscriber unit.

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4. The method of claim 3, further comprising the step of identifying the sub-talkgroup that comprises stored identities of subscriber units of the talkgroup that have recently engaged in communications with the first subscriber unit.
- 5 5. The method of claim 3, further comprising the step of identifying the sub-talkgroup that comprises stored identities of subscriber units of the talkgroup having a priority level at least as high as the first subscriber unit.
- 10 6. The method of claim 3, further comprising the step of identifying the sub-talkgroup that comprise stored identities of subscriber units of the talkgroup having locations within a predetermined distance of the first subscriber unit.
7. The method of claim 1, further comprising steps of:
- 15 receiving, based on the at least one inbound code, streams of voice information from subscriber units of the sub-talkgroup;
- summing the streams of voice information to produce summed voice information; and
- 20 transmitting, based on the outbound code, the summed voice information to the talkgroup.
8. The method of claim 7, further comprising a step of de-assigning the outbound code and the at least one inbound code when the talkgroup call has ended.
- 25 9. The method of claim 7, further comprising steps of:
- 30 receiving, from a second subscriber unit of the talkgroup but not of the sub-talkgroup, a request to talk;
- assigning an additional inbound code to the second subscriber unit;
- 35 receiving, based on the additional inbound code, an additional stream of voice information from the second subscriber unit; and

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summing the streams of voice information and the additional stream of voice information to produce the summed voice information.

- 5 10. The method of claim 9, further comprising a step of de-assigning the outbound code, the at least one inbound code and the additional inbound code when the talkgroup call has ended.

- 10 ~~11.~~ In a wireless communication system comprising subscriber units in wireless communication with a fixed infrastructure, a method for the fixed infrastructure to establish a talkgroup call, the method comprising steps of:

15 receiving inbound voice data from a plurality of subscriber units within a talkgroup, the inbound voice data comprising voice data from a first subscriber;

summing the inbound voice data to produce first summed voice data;

20 removing the first subscriber's voice data from the summed voice data to produce second summed voice data;

transmitting the first summed voice data to subscribers within the talkgroup; and

25 transmitting the second summed voice data to the first subscriber.

- ~~12.~~ In a wireless communication system, a method comprising steps of:

30 receiving inbound voice data from a plurality of subscriber units within a talkgroup, the inbound voice data comprising voice data from a first subscriber;

transmitting first summed voice data to subscribers within the talkgroup that are not actively talking, wherein the first summed voice data comprises a

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summation of a plurality of subscriber units that are actively transmitting inbound voice; and

transmitting second summed voice data to subscribers within the talkgroup that are actively talking, wherein the second summed voice data comprises the first summed data without a voice content of an individual talker.

13. The method of claim 12 further comprising the steps of:

determining an individual subscriber from the plurality of subscriber units within the talkgroup, wherein the individual subscriber is actively transmitting inbound voice; and

transmitting the second summed voice data to the individual subscriber, wherein the second summed voice data comprises the first summed data without a voice content of the individual subscriber.

14. A wireless communication system comprising:

a receiver having a voice signal for an individual subscriber and a plurality of other inbound voice signals as an input and outputting voice signals suitable for summing;

summation circuitry having the voice signals suitable for summing as an input and outputting a summed voice signal, wherein the summed voice signal comprises a summation of the plurality of inbound voice signals minus a voice signal for the individual subscriber; and

transmission circuitry having the summed voice signal as an input and outputting an encoded voice signal suitable for being received by the individual subscriber.

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